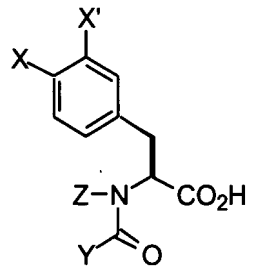
Claim Listing

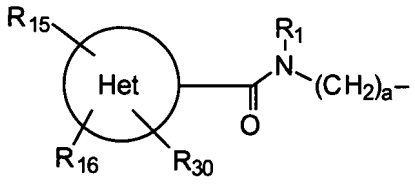
1. (Original.) A compound of the formula:



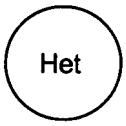
I

wherein:

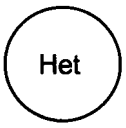
one of X and X' is hydrogen, halogen, or lower alkyl, and the other is a group of the formula:



X-7

wherein  is a 5- or 6-membered heteroaromatic ring containing 1, 2 or 3 heteroatoms selected from N,O, and S;

or

 is a 9- or 10-membered bicyclic heteroaromatic ring containing 1, 2, 3 or 4 heteroatoms selected from O, S, and N,

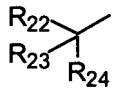
a is 0 or 1,

R_1 is hydrogen or lower alkyl,

R_{15} is hydrogen, halogen, nitro, lower alkyl sulfonyl, cyano, lower alkyl, lower alkoxy, lower alkoxycarbonyl, carboxy, lower alkyl aminosulfonyl, perfluorolower alkyl, lower alkylthio, hydroxy lower alkyl, alkoxy lower alkyl, alkylthio lower alkyl, alkylsulfinyl lower alkyl,

alkylsufonyl lower alkyl, lower alkylsulfinyl, lower alkanoyl, aroyl, aryl, aryloxy or a group of the formula R_{17}-C≡C-,
and R_{16} is hydrogen, halogen, nitro, cyano, lower alkyl, OH, perfluorolower alkyl, or lower alkylthio,and
R_{30} is hydrogen or lower alkyl, or is absent; and

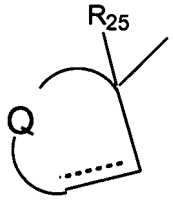
Y is a group of the formula:



Y-1

wherein:
R_{22} and R_{23} are independently aryl, heteroaryl or lower alkyl which is unsubstituted or substituted by one or more chloro, bromo, nitro, hydroxy, lower alkoxy, aryl, lower alkanoyl, aroyl or cyano,
R_{24} is aryl, cyano, alkylsulfonyl or lower alkyl or alkenyl unsubstituted or substituted by an aryl or heteroaryl ring, and when R_{22} is aryl and R_{23} is aryl or lower alkyl, hydrogen, and the total number of carbon atoms in R_{22}, R_{23} and R_{24} is from 6 to 14; or

Y is a 3-7 membered ring of the formula:



Y-2

wherein:
R_{25} is lower alkyl, unsubstituted or fluorine substituted lower alkenyl, or a group of formula R_{26}—$(CH_2)_e$– ,
R_{26} is aryl, heteroaryl, azido, cyano, hydroxy, lower alkoxy, lower alkoxycarbonyl, lower alkanoyl, lower alkylthio , lower alkyl sulfonyl, lower alkyl sulfinyl, perfluoro lower alkanoyl, nitro, or R_{26} is a group of formula -$NR_{28}R_{29}$, wherein:
R_{28} is hydrogen or lower alkyl,
R_{29} is hydrogen, lower alkyl, lower alkoxycarbonyl, lower alkoxycarbonylaminocarbonyl, lower alkanoyl, aroyl, heteroaroyl, perfluoro lower alkanoyl, lower alkyl sulfonyl, lower alkylaminocarbonyl, arylaminocarbonyl, heterocycloalkyl carbonyl, lower alkylaminothiocarbonyl, or
R_{28} and R_{29} taken together with the nitrogen atom to which they are attached form a 4, 5 or 6-membered saturated heterocyclic ring containing one or two heteroatoms with the second heteroatom being O, S, or N–R_{27};
Q is -$(CH_2)_f$ O-, -$(CH_2)_f$ S-, -$(CH_2)_f$-, or when f=0, a bond,

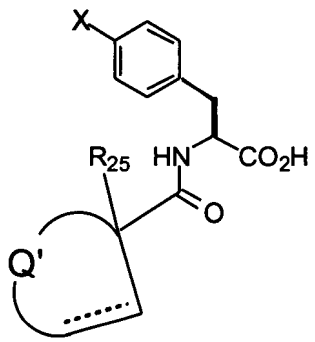
R_{27} is hydrogen, lower alkyl, aryl, lower alkanoyl, aroyl, or lower alkoxycarbony;
the carbon atoms in said ring are unsubstituted or substituted by lower alkyl or halogen,
e is an integer from 0 to 4, and
f is an integer from 0 to 3; and

Z is hydrogen or lower alkyl;

and the pharmaceutically acceptable salts and esters thereof.

2. (Original.) The compound of claim 1 wherein X' is hydrogen.

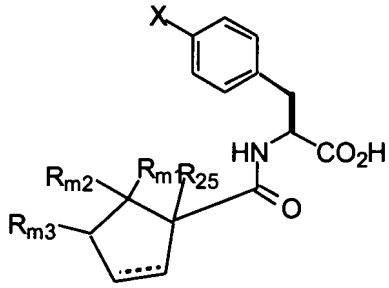
3. (Original.) The compound of claim 2 having the formula:



Ia

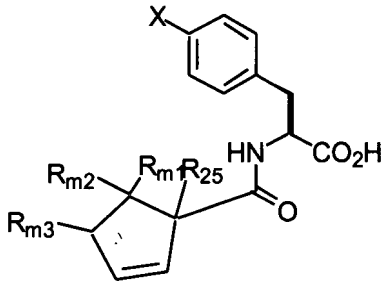
wherein Q' is unsubstituted or lower alkyl substituted -$(CH_2)_f$-, f is 1, 2 or 3, and X and R_{25} are as in claim 1.

4. (Original.) The compound of claim 3 wherein f is 2 whereby said compound is of the formula:



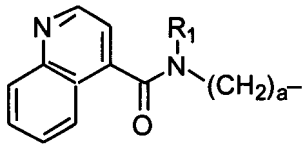
wherein R_{m1}, R_{m2} and R_{m3} are independently hydrogen or lower alkyl, and R_{25} is lower alkyl, lower alkenyl which is unsubstituted or substituted by fluorine, or a group of the formula $R_{26}—(CH_2)_e-$ wherein R_{26} and e are as in claim 1.

5. (Original.) The compound of claim 4 wherein said compound is of the formula:



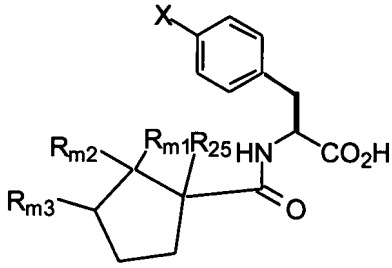
wherein R_{m1}, R_{m2} and R_{m3} and R_{25} are as in claim 4.

6. (Original.) The compound of claim 4 wherein X is a group of the formula:



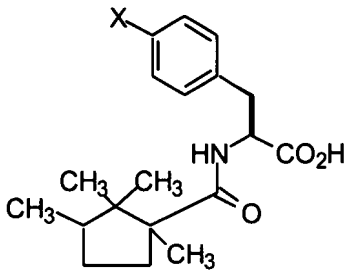
7. (Original.) The compound of claim 6 wherein a is 0.

8. (Original.) The compound of claim 4 wherein said compound is of the formula:

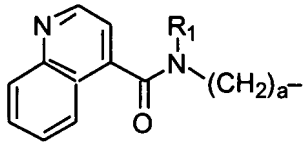


wherein R_{m1}, R_{m2} and R_{m3} and R_{25} are as in claim 4.

9. (Original.) The compound of claim 8 wherein said compound is of the formula:



10. (Original.) The compound of claim 9 wherein X is a group of the formula:

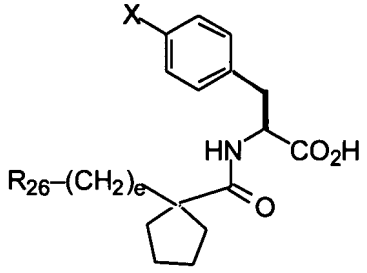


11. (Original.) The compound of claim 10 wherein a is 0.

12. (Canceled.)

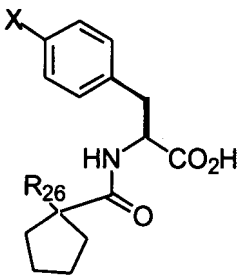
13. (Original.) The compound of claim 8 wherein R_{m1}, R_{m2} and R_{m3} are all hydrogen, and R_{25} is lower alkyl or lower alkenyl which is unsubstituted or substituted by fluorine.

14. (Original.) The compound of claim 4 having the formula:



wherein X, R_{26} and e are as in claim 1.

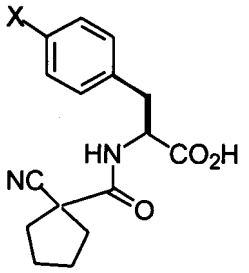
15. (Original.) The compound of claim 14 wherein e is 0 whereby said compound is of the formula:



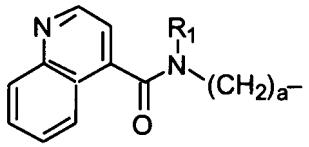
16. (Original.) The compound of claim 15 wherein R_{26} is cyano or aryl.

17. (Original.) The compound of claim 16 wherein R_{26} is cyano or phenyl which is unsubsituted or mono-substituted by halogen, lower alkyl or lower alkoxy.

18. (Original.) The compound of claim 17 wherein said compound is of the formula:



19. (Original.) The compound of claim 18 wherein X is a group of the formula:



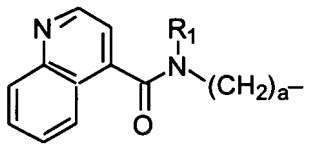
wherein R_1 and a are as in claim 1.

20. (Original.) The compound of claim 19 wherein a is 0.

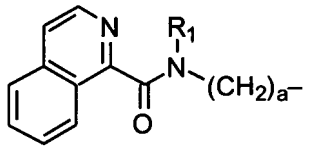
21. (Canceled.)

22. (Original.) The compound of claim 17 wherein R_{26} is phenyl which is unsubsituted or mono-substituted by halogen, lower alkyl or lower alkoxy.

23. (Original.) The compound of claim 22 wherein X is a group of the formula:



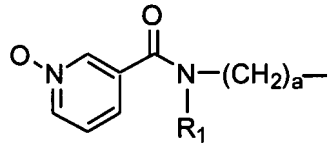
or



24. (Original.) The compound of claim 23 wherein a is 0.

25-29. (Canceled.)

30. (Original.) The compound of claim 22 wherein X is a group of the formula:

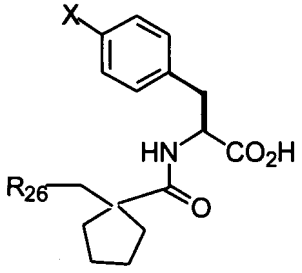


wherein R_1 and a are as in claim 1.

31. (Original.) The compound of claim 30 wherein a is 0.

32. (Canceled.)

33. (Original.) The compound of claim 14 wherein e is 1 whereby said compound is of the formula:



34-132. (Canceled.)